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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,111	03/12/2004	Mark R. Ayres	495812005700	8922
25226 7590 01/29/2008 MORRISON & FOERSTER LLP 755 PAGE MILL RD PALO ALTO, CA 94304-1018			EXAMINER WYATT, KEVIN S	
			ART UNIT 2878	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/800,111

Applicant(s)

AYRES, MARK R.

Examiner

Kevin Wyatt

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9, 13-27 and 29-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26, 27 and 29-34 is/are allowed.
- 6) ☒ Claim(s) 1-9, 13 and 16-25 is/are rejected.
- 7) ☒ Claim(s) 14 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1207.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/14/2007 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-9, 13, and 16-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Opsal (U.S. Patent No. 5,042,952) in view of Fanton (U.S. Patent No. 5,181,080).

Regarding claim 1, Opsal shows in Figs. 1-2, a system for measuring a characteristic of an optical article (22, i.e., sample), comprising: a light source (26 or 40, i.e., laser) for producing light; an optical element (36, i.e., objective) for focusing the light along a probe path to a reference location associated with an expected position of an optical article; a sensor (50, i.e., photodetector) for detecting the light from the reference location; and a processor (32), wherein the processor is configured to receive the

signals from the sensor (50, i.e., photodetector) and determine a deflection angle and a direction of the deflection angle of the light from the probe path. Opsal does not explicitly disclose the position sensitive diode device generates two signals, a first signal associated with a location of an intensity centroid along one direction and a second signal associated with a location of an intensity centroid along a second direction, the second direction orthogonal to the first direction. Fanton discloses or shows a detector which generates two signals, a first signal associated with a location of an intensity centroid along one direction and a second signal associated with a location of an intensity centroid along a second direction, the second direction orthogonal to the first direction (col. 4, lines 35-50). In addition, although Fanton does not explicitly disclose whether or not detector (40) is a position sensitive diode, selecting from any of the known available detection devices to measure intensity characteristics and locations of light beams would require only routine skill in the art. It would have been obvious to one skilled in the art to provide a sensor such as one disclosed in Fanton to the device of Opsal for the purpose of providing information on surface characteristics in greater detail.

Regarding claim 2, Opsal further shows in Figs. 1-2, that the reference location is associated with an expected position of a surface of the optical article (22, i.e., sample).

Regarding claim 3, Opsal further shows in Figs. 1-2, that the reference location is associated with an expected position within the optical article (22, i.e., sample).

Regarding claim 4, Opsal further shows in Figs. 1-2, the system of claim 1, including a stage (24, i.e., movable stage) for translating an optical article (22, i.e.,

sample) relative to the light source (26 or 40, i.e., laser) and the probe path in at least one dimension.

Regarding claim 5, Opsal further discloses in addition to the system of claim 1, further including a stage (24, i.e., movable stage) for translating an optical article relative to the light source and the probe path in three dimensions (col. 16, lines 20-24).

Regarding claim 6, Opsal further shows in Figs. 1-2, wherein the processor (32) is further configured to determine a characteristic of the optical article (22, i.e., sample) based on the deflection angle of the light at multiple locations of the optical article (col. 16, lines 31-37).

Regarding claim 7, Opsal further discloses that the characteristic includes one or more of surface flatness, a divot feature, or a peak feature of the optical article (col. 16, lines 31-37).

Regarding claim 8, Opsal further discloses that the characteristic includes an index of refraction value (col. 9, lines 20-22).

Regarding claim 9, Opsal further discloses the characteristic includes stored information (col. 10, lines 48-50).

Regarding claim 13, Opsal discloses the claimed invention as stated above. Opsal does not explicitly disclose the position sensitive diode device generates two signals, a first signal associated with a location of an intensity centroid along one direction and a second signal associated with a location of an intensity centroid along a second direction, the second direction orthogonal to the first direction. Fanton discloses or shows a detector which generates two signals, a first signal associated with a

location of an intensity centroid along one direction and a second signal associated with a location of an intensity centroid along a second direction, the second direction orthogonal to the first direction (col. 4, lines 35-50). In addition, although Fanton does not explicitly disclose whether or not detector (40) is a position sensitive diode, selecting from any of the known available detection devices to measure intensity characteristics and locations of light beams would require only routine skill in the art. It would have been obvious to one skilled in the art to provide a sensor such as one disclosed in Fanton to the device of Opsal for the purpose of providing information on surface characteristics in greater detail.

Regarding claim 16, Opsal further shows in Figs. 1-2, the sensor is positioned to detect light passing through the reference location (sample surface).

Regarding claim 17, Opsal further shows in Figs. 1-2, the sensor is positioned to detect light reflected from the reference location (sample surface).

Regarding claim 18, Opsal discloses a method for measuring a characteristic of an optical article (22, i.e., sample), comprising: illuminating an optical article with a focused beam of light along a probe path (col. 8, lines 48-53 and col. 10, lines 3-11); detecting the light with a sensor (50a, i.e., photodetector) after the light interacts with the optical article; determining a deflection angle and a direction of the deflection angle of the beam of light with respect to the probe path after interacting with the optical article (col. 5, lines 34-37), wherein the sensor comprises a position sensitive device operable to generate two signal, a first signal associated with a location of an intensity centroid along one direction and a second signal associated with a location of an intensity

centroid along a second direction, the second direction orthogonal to the first direction; and determining a characteristic of the optical article based on the deflection angle (col. 16, lines 31-37). Fanton discloses or shows a detector which generates two signals, a first signal associated with a location of an intensity centroid along one direction and a second signal associated with a location of an intensity centroid along a second direction, the second direction orthogonal to the first direction (col. 4, lines 35-50). In addition, although Fanton does not explicitly disclose whether or not detector (40) is a position sensitive diode, selecting from any of the known available detection devices to measure intensity characteristics and locations of light beams would require only routine skill in the art. It would have been obvious to one skilled in the art to provide a sensor such as one disclosed in Fanton to the device of Opsal for the purpose of providing information on surface characteristics in greater detail.

Regarding claim 19, Opsal further discloses a method further including scanning multiple positions of the optical article with the focused beam of light to determine deflection angles at multiple positions of the optical article (col. 16, lines 31-37).

Regarding claim 20, Opsal further discloses a method further including using the multiple deflection angles to determine a characteristic of the optical article (col. 16, lines 31-37).

Regarding claims 21-23, Opsal further discloses further including producing a surface relief pattern and surface plot from the multiple deflection angles (col. 7, lines 65-68 and col. 8, lines 1-5).

4. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Opsal (U.S. Patent No. 5,042,952) and Fanton (U.S. Patent No. 5,181,080) as applied to claim 19 and further in view of Migeotte (U.S. Patent No. 3,688,235).

Regarding claims 24-25 the modified device of Opsal discloses the claimed invention as stated above. The modified device of Opsal does not disclose confocally imaging or filtering the light after the light interacts with the optical article. Migeotte shows in Fig. 1, confocally imaging and filtering the light after the light interacts with an optical article. It would have been obvious to one skilled in the art to incorporate the teachings of Migeotte to the modified device of Opsal for the purpose of improving accuracy and sensitivity of detection of measured light.

***Allowable Subject Matter***

5. Claims 26-27 and 29-34 are allowed.
6. Claim 14-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 26, the prior art fails to disclose or make obvious a method comprising, in addition to the other recited steps of the claim, "the focused beam of light is focused during a scan to at least two different positions along an optical axis of the focused beam of light."

Claim 14 has allowable subject matter because the prior art fails to disclose or



make obvious, either singly or in combination, a system of claim 1, comprising, in addition to the other recited features of the claim, "a second optical element positioned to focus the light beam from the reference location to a pinhole filter between the second optical element and the sensor."

***Response to Arguments***

8. Applicant's arguments, see page 4, filed 12/14/2007, with respect to claims 1, 18 and 26 have been fully considered and are persuasive. The rejection of claims 1, 18 and 26 as being anticipated by Tsutsumi (Publication No. U.S. 2002/0031290 A1) has been withdrawn.

9. Applicant's remaining arguments filed 12/14/2007 have been fully considered but they are not persuasive.

In response to applicant's arguments regarding claim 13, that the combination of Opsal and Fanton fails to disclose or suggest a position sensitive diode comprising the limitations of claims 12-13, the applicant submits that position sensitive diodes are devices well known and available in the art. In addition, it is suggested in paragraph 0025, lines 12-16 of applicant's specification, that position sensitive diodes are interchangeable with other detection devices in accordance with applicant's invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Wyatt whose telephone number is (571)-272-5974. The examiner can normally be reached on Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571)-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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